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(54) LIGHT-EMITTING SEMICONDUCTOR ELEMENT AND MANUFACTURE THEREOF

beams from the light-emitting surface.

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(57) Abstract:

PURPOSE: To form a light-emitting semiconductor element, in which currents are flowed extending over all the corners of a light-emitting surface and through which the efficiency of extraction of beams from the light-emitting surface is improved, by forming a current cut-off layer consisting of a semiconductor having a conduction type reverse to an ohmic contact layer just under a bonding pad for an electrode layer.

CONSTITUTION: An ohmic contact layer 25 composed of P type GaAs in high carrier concentration is shaped onto the surface of a P type $\text{Ga}_{0.3}\text{Al}_{0.7}\text{As}$ layer 24 according to a proper pattern. An approximately circular current cut-off layer 30 consisting of N type GaAs having a conduction type reverse (negative polarity) to the ohmic contact layer 25 is arranged at approximately the center of a substrate 10, and positioned at the upper section of the ohmic contact layer 25. Accordingly, currents do not concentrate to a section just under a bonding pad and uniform currents can be flowed through an electrode layer for a light-emitting surface, thus reducing light emission while improving the efficiency of extraction of

